

ORDINANCE NO. 2008 – 2306

AN ORDINANCE OF THE CITY COUNCIL
OF THE CITY OF NATIONAL CITY
ADOPTING APPENDIX J OF THE 2007
CALIFORNIA BUILDING CODE AND
AMENDING CHAPTER 15.70 (GRADING)
OF THE NATIONAL CITY MUNICIPAL CODE

The City Council of the City Of National City does ordain as follows:

Section 1. The City Council of the City of National City hereby adopts Appendix J of the 2007 California Building Code.

Section 2. The City Council of the City Of National City hereby amends Title 15, Chapter 15.70 of the National City Municipal Code to read as follows:

Chapter 15.70

GRADING

Sections:

- 15.70.005 Adoption of Appendix J of the 2007 California Building Code — Amended.
- 15.70.010 Purpose
- 15.70.015 Appendix J of the 2007 California Building Code, Section J101 General, Subsection 1 Scope — Amended.
- 15.70.020 Appendix J of the 2007 California Building Code, Section J102 Definitions — Amended.
- 15.70.025 Hazards and safety precautions.
- 15.70.030 Appendix J of the 2007 California Building Code, Section J103, Permits Required, Subsection 2.1 Exemptions –Amended.
- 15.70.035 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.2 –Amended.
- 15.70.040 Appendix J of the 2007 California Building Code Exemptions. Section J103.2.5 – Amended.
- 15.70.045 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.6 – Amended.
- 15.70.050 Appendix J of the California Building Code Exemptions, Section J103.2.8 –Added.
- 15.70.055 Appendix J of the 2007 California Building Code Exemptions. Section J103.2.9 – Added.
- 15.70.060 Appendix J of the 2007 California Building Code, Section J104.5 – Engineered Grading Requirements – Added.
- 15.70.065 Appendix J of the 2007 California Building Code, Section J104.6 Regular Grading and Retaining Wall Construction Requirements –Added.

- 15.70.070 Appendix J of the 2007 California Building Code, Section J104.7 Licenses and Insurance – Added.
- 15.70.075 Appendix J of the 2007 California Building Code, Section J104.8 Conditions – Added.
- 15.70.080 Appendix J of the 2007 California Building Code, Section J105.3 Inspections – Added.
- 15.70.085 Appendix J of the 2007 California Building Code. Section J106.1 (2) Exemptions– Amended.
- 15.70.090 Appendix J of the 2007 California Building Code, Section J107 Fills, Subsection 1 General – Amended.
- 15.70.095 Appendix J of the 2007 California Building Code, Section J107 Fills, Subsection 2 Surface Preparation – Amended.
- 15.70.100 Appendix J of the 2007 California Building Code, Section J107 Fills, Subsection 4 –Amended.
- 15.70.105 Appendix J of the 2007 California Building Code, Section J108 Setbacks, Subsection 1 –Amended.
- 15.70.110 Appendix J of the 2007 California Building Code, Section J108 Setbacks, Subsection 2 Top of Slope – Amended.
- 15.70.115 Appendix J of the 2007 California Building Code, Section J108 Setbacks, Figure J108.1, Drainage Dimensions – Amended.
- 15.70.120 Appendix J of the 2007 California Building Code, Section J108 Setbacks. Subsection 3 Slope Protection – Amended.
- 15.70.125 Appendix J of the 2007 California Building Code, Section J109 Drainage and Terracing, Subsection 4 Drainage – Amended.
- 15.70.130 Appendix J of the 2007 California Building Code. Section J109 Drainage and Terracing. Subsection 5 Surface Run-off Interception –Added.
- 15.70.135 Appendix J of the 2007 California Building Code, Section J109 Drainage and Terracing. Subsection 6 Easements and Encumbrances –Added.
- 15.70.140 Appendix J of the 2007 California Building Code. Section J110 Erosion Control, Subsection 3 Stormwater Erosion and Sediment– Added.
- 15.70.145 Grading fees.
- 15.70.150 Completion of work.
- 15.70.155 Rough grading permit.
- 15.70.160 Parking lots.
- 15.70.0165 Bonds.
- 15.70.170 Violation a misdemeanor.

15.70.005 Adoption of Appendix J of the 2007 California Building Code – Amended.

There is adopted by the city council for the purpose of prescribing regulations governing the excavation and grading on private property, and the issuance of permits and providing for the inspection thereof. Appendix J of the 2007 California Building Code, subject to the amendments, additions and deletions set forth in this chapter. A copy of this adopted code is on file in the office of the City Engineer.

15.70.010 Purpose. The purpose of this ordinance is to safeguard life, limb, property, and the public welfare by regulating grading and other earthwork activities, or by controlling existing fills and excavations, and the construction of retaining walls, drainage facilities on private property and to ensure that soil erosion, sedimentation, and storm water runoff are regulated to reduce, to the Maximum Extent Practicable, Pollutants entering the Storm Water Conveyance System and Waters of the State to protect water quality.

15.70.015 Appendix J of the 2007 California Building Code, Section J101 General, Subsection 1 Scope – Amended. Section J101, Subsection 1 of the 2007 California Building Code is amended to read as follows:

J101.1 Scope. This ordinance sets forth rules and regulations to control excavation, grading, drainage, earthwork construction, including fills and embankments, and retaining wall construction; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading and retaining wall construction.

15.70.020 Appendix J of the 2007 California Building Code, Section J102 Definitions – Amended. The following shall be supplementary to, or modify certain definitions given in the 2007 California Building Code in Appendix J Section J102. All other definitions listed in the 2007 Building Code shall remain applicable. Section J102 of the 2007 California Building Code is amended to read as follows:

APPROVAL. The term "approval" does not constitute certification of the project as a whole in terms of completeness, accuracy, design and construction standards, as shown on the plans.

AUTHORITY HAVING JURISDICTION. The Authority Having Jurisdiction means the City Engineer of the City of National City and any duly authorized representative.

BEST MANAGEMENT PRACTICES OR BMPS - means schedules of activities, pollution treatment practices or devices, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices or devices to prevent or reduce the discharge of pollutants directly or indirectly to Storm Water, Receiving Waters, or the Storm Water Conveyance System. Best Management Practices also include but are not limited to treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage. Best Management Practices may include any type of pollution prevention and pollution control measure that can help to achieve compliance with this Chapter. Best Management Practices may include any type of pollution prevention and pollution control measure, which the City Engineer finds, is necessary to reduce pollutants entering the Waters of the State to the Maximum Extent Practicable.

BUILDING OFFICIAL - Means the City Engineer.

CIVIL ENGINEER - Is a professional engineer registered in the state to practice in the field of civil works. He or she is the person directly responsible for the project design, plan certification, and construction supervision.

DRAINAGE PLAN - A plan which shows existing and proposed site drainage within a property that is to be developed or rough graded. The drainage plan shall be prepared by a Registered Civil Engineer, an Architect, or other qualified and licensed professionals, and shall comply with the standards and requirements of the City Engineer. If, for a given development, no grading is proposed, or the earthwork quantity involved in the grading is below the established limit of this ordinance, and for which a grading plan is not required, then as a minimum, a drainage plan shall be submitted for the development.

EROSION CONTROL PLAN - is a plan prepared under the direction of and signed by a Civil Engineer competent in the preparation of such plans and knowledgeable about current erosion control methods. The plan shall provide for protection of exposed soils, prevention of discharge of sediment, and desiltation of runoff at frequent intervals along flowage areas, at entrances to storm drains, at entrances to streets and driveways, and at the exit of the area being graded.

EROSION CONTROL SYSTEM - means any combinations of desilting facilities, retarding basins, flow decelerates, and/or erosion protection (including effective planning and the maintenance thereof) to protect the project site. adjacent private property, watercourses, public facilities, graded improvements, existing natural facilities, archaeological artifacts, and relieve waters of suspended sediments or debris prior to discharge from the site.

GRADE - Means the vertical location of the ground surface, in relation to a National City benchmark elevation.

MAXIMUM EXTENT PRACTICABLE OR MEP - means the standard established by Congress in Clean Water Act section 402(p)(3)(B)(iii) that municipal dischargers of Storm Water must meet. MEP is an acceptability standard for Best Management Practices based on a level of pollutant reduction that can be achieved by the most effective set of BMPs that can be implemented and still remain practicable; MEP generally emphasizes pollution prevention and source control BMPs as the first line of defense in combination with treatment methods as a backup.

PERMITTEE - means any person, corporation, partnership, limited liability company, non-profit entity, joint venture, association of any type, public entity or any other legal entity, which submits an application for a permit pursuant to this Chapter.

POLLUTANT - means any agent that may cause or contribute to the degradation of water quality, including, but not limited to, Earth Materials.

RAINY SEASON - means the period beginning October 1st and ending April 30th in the next calendar year. The remainder of the year is the Dry Season.

RETAINING WALL PLAN - A plan prepared by a registered Civil Engineer, an architect, or other qualified professional, which shows pertinent top and bottom of wall elevations and the wall profile, together with the existing and proposed ground elevations and profile at the wall. The plan shall be prepared in accordance with the requirements set forth by the City Engineer, and shall be subject to approval by the City Engineer. The plan shall be required for walls in excess of 3 feet in height, measured from the top of the footing, to the top of the wall, and for walls less than or equal to 3 feet in height measured from the top of the footing, to the top of the wall, supporting a surcharge or a sloped backfill. The retaining walls shall be in accordance with the Regional Standard Drawings, and the Standard Specifications, or shall be specially engineered.

STORM WATER CONVEYANCE SYSTEM - means private and public drainage facilities within the City of National City by which Storm Water may be conveyed to Waters of the United States, including but not limited to, streets, roads, catch basins, natural and artificial channels, natural and artificial drainage features, aqueducts, canyons, stream beds, gullies, curbs, gutters, ditches, and storm drains. Historic and current development makes use of natural drainage patterns and features as conveyances for urban runoff. Urban streams used in this manner are part of the Storm Water Conveyance System regardless of whether they are natural, man-made, or partially modified features.

WATERS OF THE STATE means any water, surface or underground, including saline waters within the boundaries of California. The definition of the "Waters of the State" is broader than that for the "Waters of the United States" in that all water in the State is considered to be a "Waters of the State" regardless of circumstances or condition. Under this definition, a municipal storm sewer system (MS4) is always considered to be a "Waters of the State". [California Water Code Section 13050 (e)].

WATERS OF THE UNITED STATES means water subject to the regulatory jurisdiction of the United States under the Federal Clean Water Act and applicable case law. In general, this includes "navigable" waters, waters tributary to "navigable" waters, and adjacent wetlands. [40 Code of Federal Regulations section 122.2.]”

15.70.025 Hazards and safety precautions. If, at any stage of work, the City Engineer determines that authorized grading is likely to endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course, the City Engineer may specify and require reasonable safety precautions to avoid the danger. The Permittee shall be responsible for removing excess soil and debris deposited upon adjacent and downstream public or private property resulting from Permittee's grading operations. Soil and debris shall be removed and damage to adjacent and downstream property repaired as directed by the City Engineer. Erosion and siltation control shall require temporary or permanent siltation basins, energy dissipaters, or other measures as field conditions warrant, whether or not such measures are a part of approved plans. The Permittee shall incur cost associated with any work outlined in this section.

The City Engineer shall not issue a grading permit in any case where the City Engineer finds that the work, as proposed by the applicant, will damage any private or public property, or interfere with any existing drainage course in a manner which may cause damage to any adjacent property, or result in the depositing of debris on any public way, or create an unreasonable hazard to person or property, or cause or contribute to an exceedance of state water quality objectives, or fail to reduce pollutants from the site to the Maximum Extent Practicable.

15.70.030 Appendix J of the 2007 California Building Code. Section J103 Permits Reauired, Subsection.2.1 Exemptions – Amended. Section J103.2.1 of the 2007 California Building Code is amended to read as follows:

1. When approved by City Engineer, grading in an isolated or self-contained area, provided there is no danger to the public, and such grading will not adversely affect adjoining properties.

15.70.035 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.2 – Amended. Section L103.2.2 of the 2007 California Building Code is amended to read as follows:

2. AMENDED - An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from such excavation or exempt any excavation having an unsupported height greater than 5 feet (1525 mm) after the completion of such structure.

15.70.040 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.5 – Amended. Section J103.2.5 of the 2007 California Building Code is amended to read as follows:

5. Excavations for wells or trenches for utilities on private property.

15.70.045 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.6 – Amended. Section J103.2.6 of the 2007 California Building Code is amended to read as follows:

6. Mining, quarrying, excavating, processing or stockpiling of **rock**, sand, gravel, aggregate or clay where established and provided for by law, provided such operations do not affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property, excepting the dumping and stockpiling of dirt and rubble, which is strictly prohibited in National City.

15.70.050 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.8 – Added. Section J103.2.8 of the 2007 California Building Code is added to read as follows:

8. A retaining wall less than or equal to three (3) feet in height measured from the top of the footing to the top of the wall, when no surcharge is present, the backfill is level, and when not an integral part of a building. However, the construction of the retaining wall shall comply with the Regional Standard Drawings.

15.70.055 Appendix J of the 2007 California Building Code Exemptions, Section J103.2.9 – Added. Section J103.2.9 of the 2007 California Building Code is added to read as follows:

9. A fill less than 1 foot (305 mm) in depth and placed on natural terrain with a slope flatter than 1 unit vertical in 5 units horizontal (20% slope), or less than 3 feet (914 mm) in depth, not intended to support structures, that does not exceed 50 cubic yards (38.3 m³) on any one lot and does not obstruct a drainage course.

15.70.060 Appendix J of the 2007 California Building Code, Section J104.5 Engineered Grading Requirements – Added. Section J104.5 of the 2007 California Building Code is added to read as follows:

J104.5 Engineered Grading Requirements - Application for a grading permit shall be accompanied by a work schedule including details of the hauling

operation, size of trucks, haul route, dust and debris control measures and time and frequency of haul trips; four sets of plans and specifications; and two sets of supporting data consisting of a soils engineering report, engineering geology report (if necessary), drainage study, structural calculations, cost estimate, and other pertinent information as may be required by the City Engineer and all relevant information listed in the plan checklists as developed by the City Engineer.

15.70.065 Appendix J of the 2007 California Building Code. Section J104.6 Regular Grading and Retaining Wall Construction Requirements – Added. Section J104.6 of the 2007 California Building Code is added to read as follows:

J104.6 Regular Grading and Retaining Wall Construction Requirements – Each application for a grading or retaining wall permit shall be accompanied by four sets of plans and specifications, in sufficient clarity to indicate the nature and extent of the work, supporting data consisting of a soils engineering report, engineering geology report (if necessary), drainage study, structural calculations, cost estimate, and other pertinent information as required by the City Engineer. The plans shall give the location of the work, the name of the owner and the name of the person who prepared the plans. The plans shall be prepared and signed by a registered Civil Engineer when required by the City Engineer, and shall include the following information:

1. General vicinity of the proposed site.
2. Limiting dimensions and depth of cut and fill.
3. Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within 15 feet of the proposed grading.
4. All other relevant information listed in the plan checklists as developed by the City Engineer.

15.70.070 Appendix J of the 2007 California Building Code. Section J104.7 Licenses and Insurance – Added. Section J104.7 of the 2007 California Building Code is added to read as follows:

J104.7 Licenses and Insurance – Prior to the issuance of a permit, the applicant or the applicant's contractor shall present to the City Engineer evidence of the following:

- I. Coverage of general liability insurance and worker's compensation in the amounts required by the City Engineer. Such insurance policy shall name the City of National City and its officers, agents and employees as additional insured.
- II. City Business License, to be obtained from the City Revenue and Recovery Coordinator.
- III. Appropriate State Contractor License

15.70.075 Appendix J of the 2007 California Building Code. Section J104.8 Conditions – Added. Section J104.8 of the 2007 California Building Code is added to read as follows:

A. Standards. All grading, drainage, and retaining wall work done under this ordinance shall be in accordance with the approved plans and the conditions of the required permits. The work shall conform to the Standards of

the City of National City, the County of **San Diego** Regional Standard Drawings (latest adopted edition), the Standard Specifications for Public Works

Construction (latest adopted edition), and any other conditions as may be determined by the City Engineer to be applicable to the work. Deviations from the requirements of these standards may be permitted by the City Engineer, based upon written reports and recommendations by qualified authorities.

B. Water Quality. It shall be a condition of every permit issued under this Chapter that the Permittee shall comply with all the provisions of the City of National City Watercourse Protection, Storm Water Management and Discharge Control Ordinance in Chapter 14.22 of this Code.

C. Minimum BMPs. The BMPs required by the City of National City Storm Water Best Management Practices Manual adopted in this Municipal Code shall be the minimum BMPs required for issuance of a grading permit and additional BMPs may be required by the City Engineer as a condition of issuance of the grading permit.

D. Grading Plan Requirements. All grading plans, regardless of the date of submittal, shall include an erosion control plan designed to limit erosion of all disturbed portions of the property and to eliminate the transport of soil onto adjacent properties or into streets, storm drains, or drainage ways.

E. Standard Urban Storm Water Mitigation Plan (SUSMP) Checklist. A SUSMP checklist as created by the City Engineer shall be submitted with plans

15.70.080 Appendix J of the 2007 California Building Code, Section J105.3 Inspections – Added. Section J105.3 of the 2007 California Building Code is added to read as follows:

J105.3 The Permittee or his agent shall notify the City Engineer:

A. Initial inspection (pre-construction conference) - when he is ready to begin grading and not less than forty-eight (48) hours before any grading is to be commenced. The pre-construction meeting shall be attended by the owner of the property, the soils engineer and the engineering geologist (when necessary) the design engineer, the grading contractor, and the building and engineer inspectors.

B. Toe of fill inspection. After the natural ground is exposed and prepared to receive fill, but before any fill is placed.

C. Excavation Inspection - After excavation and placement is started, but before the vertical depth of the excavation exceeds 10 feet.

D. Fill Inspection. After fill and placement is started, but before the vertical height of the lifts exceeds 10 feet.

E. Drainage Device Inspection - Before and after forms and reinforcement are in place, but before any concrete is placed

F. Rough Grading. Upon completion of all rough grading, including installation of all drainage structures and other protective devices, at least twenty-four hours before inspection is to be made.

G. Final Inspection. Upon completion and approval by the project Civil Engineer and Soils Engineer of all work shown on the plans and the permit including the installation of all drainage or other structures.

H. In addition to the above, inspections for retaining walls shall be per the San Diego County Regional Standard Drawings or special Engineering.

I. Modification of approved plans. If changes are to be made in the approved plans during construction, the applicant, or his agent, shall submit an engineering change order to the inspector or to the City Engineer, for review and approval.

15.70.085 Appendix J of the 2007 California Building Code. Section J106.1 (2) Exceptions – Added. Section J106.1 (2) of the 2007 California Building Code is added to read as follows:

J106.1 (2) A cut surface in bedrock shall be permitted to be at a slope of 1 horizontal to 1 vertical (100%) only when approved by the City Engineer.

15.70.090 Appendix J of the 2007 California Building Code. Section J107 Fills. Subsection 1 General – Amended. Subsection J107.1 of the 2007 California Building Code is amended to read as follows:

J107.1 General. Unless otherwise recommended in the approved soils engineering report, fills shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor fills not intended to support structures.

15.70.095 Appendix J of the 2007 California Building Code. Section J107 Fills. Subsection 2 Surface Preparation, – Amended. Subsection J107.2 of the 2007 California Building Code is amended to read as follows:

J107.2 Surface preparation. Fill slopes shall not be constructed on natural slopes steeper than 1 unit vertical in 2 units horizontal (50% slope). The ground surface shall be prepared to receive fill by removing vegetation, non-complying fill, topsoil and other unsuitable materials scarifying to provide a bond with the new fill and, where slopes are steeper than 1 unit vertical in 5 units horizontal (20% slope) and the height is greater than 5 feet (1524 mm), by benching into sound bedrock or other competent material as determined by the soils engineer. The bench under the toe of fill shall be at least 10 feet (3048 mm) wide. The area beyond the toe of fill shall be at least 10 ft (3048 mm) wide but the cut shall be made before placing the fill and acceptance by the soils engineer or engineering geologist or both, as a suitable foundation for fill.

15.70.100 Appendix J of the 2007 California Building Code. Section J107 Fills. Subsection 4 – Amended. Subsection J107.4 of the 2007 California Building Code is amended to read as follows:

J107.4 Fill Material. Organic material shall not be permitted in fills. Except as permitted by the City Engineer, no rock or similar irreducible material with a maximum dimension greater than 12 inches (305 mm) shall be buried or placed in fills

Exception: The City Engineer may permit placement of larger rock when the soils engineer properly devises a method of placement, and continuously inspects its placement and approved the fill stability. The following conditions shall also apply:

1 Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.

2 Rock sizes greater than 12 inches (305 mm) in maximum dimension shall be 10 feet (3048 mm) or more below grade, measured vertically.

3 Rocks shall be placed so as to assure filling of all voids with well-graded soil.

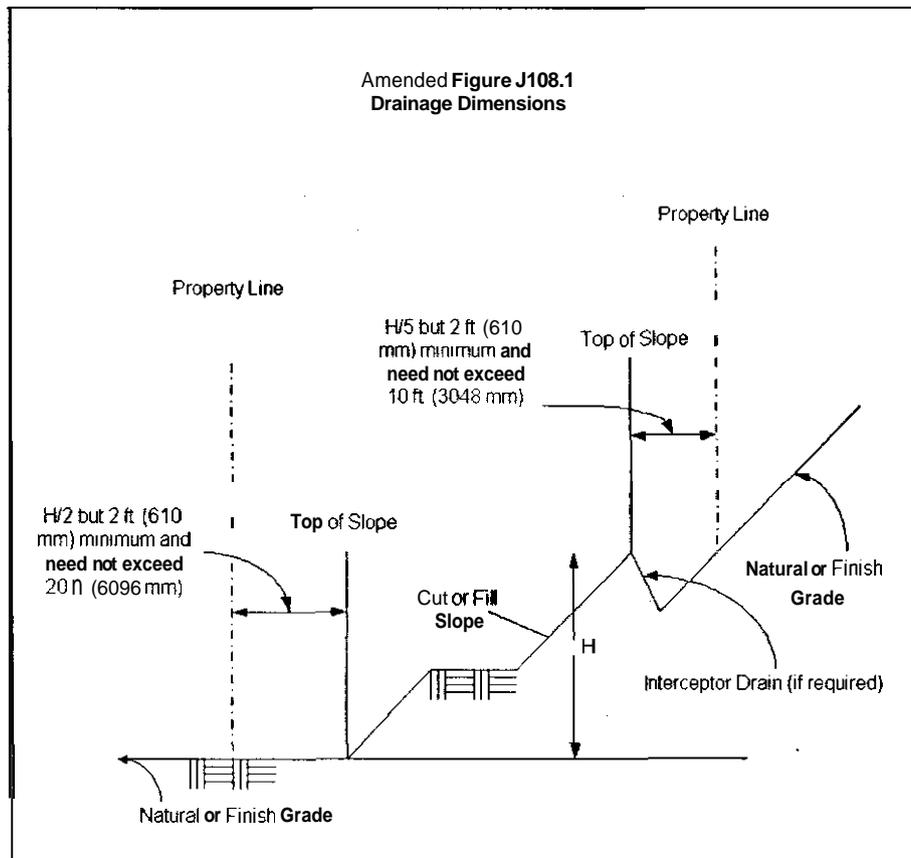
15.70.105 Appendix J of the 2007 California Building Code. Section J108 Setbacks, Subsection 1 General –Amended. Subsection J108.1 of the 2007 California Building Code is amended to read as follows:

J108.1 General. Cut and fill slopes shall be set back from the property lines in accordance with this section. Setback dimensions shall be measured perpendicular to the property line and shall be as shown in amended FIGURE J108.1 as shown in this chapter.

15.70.110 Appendix J of the 2007 California Building Code. Section J108. Setbacks, Subsection 2 Top of Slope – Amended. Subsection J108.2 of the 2007 California Building Code is amended to read as follows:

J108.2 Top of slope. The setback at the top of a cut slope shall not be less than that shown in amended Figure J108.1 as shown in this chapter, or than is required to accommodate any required interceptor drains, whichever is greater.

15.70.115 Appendix J of the 2007 California Building Code. Section J108 Setbacks, Figure J108.1. Drainage Dimensions –Amended. Figure J108.1 of the 2007 California Building Code is amended to read as follows:



15.70.120 Appendix J of the 2007 California Building Code. Section J108 Setbacks. Subsection.3 Slope Protection – Amended. Subsection J108.3 of the 2007 California Building Code is amended to read as follows:

J108.3 Slope Protection. The toe of fill slope shall be made not nearer to the site boundary line than one half the height of the slope with a minimum of 2 feet (610 mm) and a maximum of 20 feet (6096 mm). Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the City Engineer deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include but are not limited to:

1. Additional setbacks
2. Provision for retaining or slough walls.
3. Mechanical or chemical treatment of the fill slope surface to minimize erosion.
4. Provisions for the control of surface waters.

15.70.125 Appendix J of the California Building Code. Section J109 Drainage and Terracing. Subsection.4 Drainage – Amended. Subsection J109.4 of the 2007 California Building Code is amended to read as follows:

J109.4 Drainage Across property lines. Surface runoff shall not be permitted to flow from one lot to another, unless proper drainage agreements between affected property owners are executed and submitted to the City Engineer. Such agreements shall be subject to approval by the City Engineer, and recorded prior to issuance of the grading permit.

15.70.130 Appendix J of the California Building Code. Section J109 Drainage and Terracing. Subsection.5 Surface Run-off Interception – Added. Subsection J109.5 of the 2007 California Building Code is added to read as follows:

J109.5 Surface Run-off Interception. Surface run-off from new landscaping areas shall be intercepted by and directed to approved drainage facilities.

15.70.135 Appendix J of the California Building Code. Section J109 Drainage and Terracing. Subsection.6 Easements and Encumbrances – Added. Subsection J109.6 of the 2007 California Building Code is added to read as follows:

J109.6 Easements and Encumbrances. For all private water **courses** where the continuous functioning of the drainageway is essential to the protection and use of multiple properties, a covenant, a maintenance agreement and/or deed restriction shall be recorded by the applicant, placing the responsibility for the maintenance of the drainageway(s) on the owners of record of each respective lot affected. Permanent off-site drainage easements, as required by the City Engineer, shall be acquired by the applicant. Such easements shall be subject to approval by the City Engineer and recorded prior to issuance of the grading permit.

15.70.140 Appendix J of the California Building Code. Section J110 Erosion Control, Subsection 3 Stormwater Erosion and Sediment – Added. Subsection J110.3 of the 2007 California Building Code is added to read as follows:

J110.3 Stormwater Erosion and Sediment.

A. Plans for an erosion control system shall be prepared and submitted for the review and approval of the City Engineer as a part of any application for a grading permit. The erosion control system shall comply with the requirements of the latest National Pollutant Discharge Elimination System permit and Chapter 14.22 of this Code to satisfy the requirements for erosion control and eliminate the discharge of sediment and pollutants. The erosion control plan shall include, but not be limited to, the following information:

1. Name, address, and a twenty-four-hour phone number of the owner or responsible party, and the person or contractor responsible for installing and maintaining the erosion control system and performing emergency erosion control work;
2. The name, address and signature of the Civil Engineer or person who prepared the plan;
3. All desilting basins, debris basins, silt traps, and other desilting, velocity retarding and protection facilities necessary to adequately protect the site and downstream properties from erosion and its effects, preserve natural hydrologic features, and preserve riparian buffers and corridors;
4. The streets, easements, drains, and other improvements;
5. The location and placement of gravel bags, diverters, check dams, slope planting, drains, and other erosion controlling devices and measures;
6. Access routes to all such erosion control facilities and how access shall be maintained during inclement weather.

B. Erosion control system standards shall be as follows:

1. The faces of cut-and-fill slopes and the project site shall be prepared and maintained to control against erosion. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted upon approval of the City Engineer.
2. Where necessary, temporary and/or permanent erosion control devices such as desilting basins, check dams, cribbing, riprap, or other devices or methods as approved by the City Engineer, shall be employed to control erosion, prevent discharge of sediment, and provide safety.
3. Temporary desilting basins constructed of compacted earth shall be compacted to a relative compaction of ninety percent of maximum density. A gravel bag or plastic spillway must be installed for overflow, as designed by the engineer of work, to avoid failure of the earthen dam. A soils engineering report prepared by the Soils Engineer, including the type of field-testing performed, location and results of testing shall be submitted to the City Engineer for approval upon completion of the desilting basins.
4. Desilting facilities shall be provided at drainage outlets from the graded site, and shall be designed to provide a desilting capacity capable of containing the anticipated runoff for a period of time adequate to allow reasonable settlement of suspended particles.
5. Desilting basins shall be constructed around the perimeter of projects, whenever feasible, and shall provide improved maintenance access from paved roads during wet weather. Grading cost estimates must include maintenance and ultimate removal costs for temporary desilting basins.

6. The erosion control provisions shall take into account drainage patterns during the current and future phases of grading.

7. All removable protective devices shown shall be in place at the end of each working day when there is a fifty percent chance of rain within a forty-eight hour period. If the Permittee does not provide the required installation or maintenance of erosion control structures within two hours of notification at the twenty-four hour number on the plans, the City Engineer may order City crews to do the work or may issue contracts for such work and charge the cost of this work along with reasonable overhead charges to the cash deposits or other instruments implemented for this work without further notification to the owner. No additional work on the project except erosion control work may be performed until the Permittee restores the full amount drawn from the deposit.

8. At any time of year, an inactive site shall be fully protected from erosion and discharges of sediment. Flat areas with less than five percent grade shall be fully covered unless sediment control is provided through desiltation basins at all project discharge points. A site is considered inactive if construction activities have ceased for a period of ten or more consecutive days.

9. Permittee shall implement the following minimum erosion prevention methods to minimize the erosion potential:

a. If feasible, Permittee shall grade only during the dry season, especially in areas at high risk for erosion.

b. Permittee shall minimize the length of time that soils are left exposed to elements of wind and water.

c. If grading must occur during the rainy season, the total area of exposed soil shall be reduced during the rainy season.

d. Critical areas, such as drainage channels, streams and natural watercourses shall be properly protected.

e. Exposed areas shall be stabilized as quickly as feasible.

f. Sufficient waste disposal facilities shall be provided for all proposed activities.

g. Sufficient storage facilities shall be provided for all materials and equipment.

h. Permittee shall ensure that materials used for erosion and sediment control are on site at all times during the rainy season.

i. All slopes shall be protected against erosion and any unstable slopes shall be stabilized.

j. Erosion prevention shall be considered the most important erosion control measure with sediment controls as a backup.

10. During Dry Season (May 1 through September 30), Permittee shall implement the following minimum erosion prevention methods to minimize the erosion potential:

a. Adequate perimeter protection BMPs must be installed and maintained.

b. Adequate sediment control BMPs must be installed and maintained.

c. Adequate BMPs designed to control off-site sediment tracking must be installed and maintained.

d. At a minimum, 125% of the materials needed to install standby BMPs necessary to completely protect exposed portions of the site from erosion and prevent sediment discharges must be stored on the site.

e. An approved 'weather triggered' response plan is mandated for implementation in the event that a predicted storm event has, a 50% chance of rain. The proponent must have the capacity to deploy the standby BMPs within 48 hours of the predicted storm event.

f. All slopes must be equipped with erosion prevention BMPs as soon as slopes are completed for any portion of the site.

g. Cleared or graded areas left exposed at any given time are limited to the amount of acreage that the project proponent can adequately protect prior to a predicted storm event.

11. During Wet Season (October 1 through April 30), Permittee shall implement the following BMPs, in addition to the Dry Season Requirements:

a. Perimeter protection and sediment control BMPs must be upgraded if necessary to provide sufficient protection for storms.

b. Adequate erosion prevention BMPs must be installed and established for all completed slopes prior to October 1 and maintained throughout the wet season. If a BMP fails, it must be repaired, improved, or replaced with an acceptable alternate as soon as it is safe to do so.

c. The amount of exposed soil allowed at one time shall not exceed standby erosion and sediment control BMP capacity

d. An incomplete disturbed area that is not being actively graded must be fully protected from erosion if left for 10 days or more.

12. BMP Maintenance. All BMPs for erosion prevention and sediment control shall be functional at all times. Prior to the rainy season and after each major storm, all source control and structural treatment BMPs shall be inspected by the Permittee to assure the functionality and effectiveness. Proper BMP maintenance shall be conducted throughout the life of the project."

13. No grading shall be allowed from October 1st thru the following April 30th on any site if the City Engineer determines that erosion, mudflow or sediment of silt discharge may adversely affect water quality, downstream properties, drainage courses, storm drains, streets, easements, or public or private facilities or improvements unless an approved erosion control system has been implemented on the site. If the City determines that it is necessary for the City to cause erosion control measures to be installed or cleanup to be done, the Permittee shall pay all of the City's direct and indirect costs including extra inspection, supervision, and reasonable overhead charges.

14. Preservation Of Natural Hydrologic Features, Riparian Buffers and Corridors. All natural hydrologic features and riparian buffer zones and corridors must be preserved to eliminate or minimize runoff from construction sites.

15. Phased Grading. Grading shall be phased whenever the City Engineer finds that phasing is feasible and necessary to protect the Waters of the State. Areas that are cleared and graded shall be minimized to only portions of the site that are necessary for construction, and the exposure time of disturbed soil areas shall be minimized.

16. Cleared or graded areas left exposed at any given time are limited to the amount of acreage that the project proponent can adequately protect prior to a predicted storm event or 17 acres, which ever is smaller, unless the disturbance of a larger area is approved in writing by the City engineer. In the event that a project proponent requests approval to disturb an area greater than 17 acres, the project proponent shall first submit to the City Engineer, written documentation describing how it will ensure that discharges of pollutants

are reduced to the **Maximum** Extent Practicable (MEP) and prevents discharges of pollutants that would cause or contribute to a violation of water quality standards despite the larger disturbed area.

17. Advanced Treatment.

a. Treatment for sediment is required. For the purpose of this requirement, exceptional threat to water quality shall be defined as a site, which meets all of the following, except as provided in number 16 above:

1. A portion of the site is located within or directly adjacent to receiving waters listed on the CWA Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation or turbidity;

2. Disturbance is greater than five acres, including all phases of the development;

3. Disturbed slopes are steeper than 4:1 (horizontal: vertical), higher than 10 feet, and drain to the 303(d) listed receiving water;

4. Contains a predominance of soils with USDA-NRCS Erosion factors k_f greater than or equal to 0.4.

Alternatively, applicants may perform a RUSLE or MUSLE analysis to prove to the City Engineer's satisfaction that advanced treatment is not required.

b. Even if based on the criteria in number 16, above, advanced treatment would not ordinarily be required, advanced treatment may be required at the discretion of the City Engineer based on a record of noncompliance.

c. Treatment effluent water quality shall meet or exceed the water quality objectives for turbidity, pH, toxicity, and any other parameter deemed necessary by the City Engineer, as listed in the Water Quality Control Plan for the San Diego Basin for inland surface waters and lagoons and estuaries for the appropriate hydrologic unit.

d. Applicant shall provide design, operations and maintenance schedule, monitoring plan, certification of training of staff to the satisfaction of the City Engineer.

18. Establishment of Permanent Vegetation.

a. General. The face of all cut and fill slopes, in excess of 3 feet in vertical height, but only final slopes of any borrow pit, shall be planted and maintained with a ground cover or other planting to protect the slopes against erosion and instability. Planting shall commence as soon as slopes are completed on any portion of the site and shall be established upon all slopes prior to the final approval of the grading. In order to minimize the period during which a cut or filled surface remains exposed, such planting shall provide for rapid short-term coverage of the slope as well as long-term permanent coverage. Planting materials and procedures shall conform to regulations adopted by the City Engineer. The City Engineer may approve other plant materials as specified by a landscape architect. The Permittee shall maintain such planting until it is well established as determined by the City Engineer.

a. Minimum Requirements. In addition to planting with ground cover, slopes in excess of fifteen (15) feet in vertical height shall be planted with shrubs in 2-1/4 inch pots or trees having a one (1) gallon minimum size at ten (10) feet on center in both directions on the slope. The City Engineer may vary the plant and planting pattern, but not the quantity, upon the recommendation of landscape architect and approval.

c. Where cut slopes are not subject to erosion due to their rocky character or where the slopes are protected with pneumatically applied concrete mortar or otherwise treated to protect against erosion and instability to the satisfaction of the City Engineer, the requirement of this subsection may be waived by the City Engineer.

d. The City Engineer may require the applicant to temporarily stabilize and reseed disturbed soil areas to protect the Waters of the State. If grass or ground cover is not established by the beginning of the wet season, temporary erosion control measures such as erosion control mats or blankets shall be installed on the slopes. If grass or ground cover is not

established by the beginning of the wet season, temporary erosion control measures such as erosion control mats or blankets shall be installed on the slopes.

19. Irrigation System Requirements.

a. General. Except for agricultural grading permits, all slopes to be constructed, but only final slopes of any borrow pit, shall be provided with an irrigation system which shall be used by the Permittee to promote the growth of plants to protect the slopes against erosion. The Permittee shall be responsible for installation and maintenance of the irrigation system until the City Engineer determines that the system has been properly installed and meets the minimum requirements of this section. When the City Engineer finds that a slope less than fifteen (15) feet in height is located in an area as to make hand watering possible, conveniently located hose bibs may be accepted in lieu of the required irrigation system when a hose no longer than fifty (50) feet would be required.

b. Minimum Requirements (1) Plans for the irrigation system shall be in accordance with San Diego Regional Standard Specifications for Sprinkler Irrigation Systems and shall be approved by the National City, City Engineer prior to installation. (2) The irrigation system shall be located relative to existing and proposed property lines to insure that the irrigation system and the slopes sprinkled thereby will both be within the same property boundaries. The irrigation system shall be supplied or be readily converted so as to be supplied through the metered water service line serving each individual property. (3) The irrigation system shall provide uniform coverage for the slope area at a rate of not less than 0.03 inches per hour, nor greater than 0.30 inches per hour. A functional test of the irrigation systems shall be performed to the satisfaction of the City Engineer prior to final approval of the grading. (4) A check valve and balance cock shall be installed in the system where drainage from sprinkler heads will create an erosion problem. (5) Adequate back flow protection devices shall be installed in each irrigation system. Such devices shall be protected against physical damage during construction operations.

20. Waiver Of Planting And Irrigation Requirements.

The City Engineer may modify or waive the requirements for planting and/or irrigation systems if he/she finds that said requirements would be unreasonable or unnecessary for any of the following reasons: (a) the area is subject to periodic inundation, or (b) water is unavailable to the area such that irrigation would be impractical or impossible, or (c) the area is naturally devoid of vegetation.

21. General Construction Permit Requirements.

a. Notice of Intent. Permittees required to comply with the State Construction General Storm Water Permit shall maintain on site and make available for inspection on request by the City any state-issued Waste Discharge Identification Number (WDID) for the site, and a copy of the Notice of Intent (NOI) filed with the State Water Resources Control Board (SWRCB) pursuant to that permit.

b. Storm Water Pollution Prevention Plan. Permittees required to prepare a SWPPP under the State General Construction Storm Water Permit must prepare the Plan, implement the Plan and maintain it at the site, readily available for review. Failure to comply with an applicable state-required SWPPP is a violation of this Chapter.

c. Facility Monitoring. Permittees required to conduct monitoring under the State Construction General Storm Water Permit must conduct such monitoring in conformance with requirements specified by the State, retain records of such monitoring on site, and make such records available for inspection by the City Engineer.

15.70.145 Grading fees. The plan review and permit fees shall be assessed in accordance with City Ordinance No. 1929 and the National City Fee Schedule.

15.70.150 Completion of work. Final approval shall not be given, grading securities shall not be released, and a notice of completion or certificate of use and occupancy shall not be issued, until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the final approved grading plan, and the required reports and the as-built plans have been submitted.

15.70.155 Rough grading permit. When grading is to be performed on a property for which no prior site development plans have been approved, and on which no other construction is proposed, the applicant shall obtain special approval of the City Engineer, as well as the Director of the Planning Department for such grading. The rough-grading permit thus issued shall be subject to the special requirements of both the City Engineer and the Planning Director.

15.70.160 Parking lots. Existing or new parking lots, which are exempted from the requirements of a grading permit, shall be paved or resurfaced in accordance with an approved drainage plan.

15.70.165 Bonds. The City Engineer may require bonds in such form and amounts as may be deemed necessary to ensure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond the applicant may file a cash deposit or instrument of credit with the City Engineer in an amount equal to that which would be required in the surety bond.

15.70.170 Violation a misdemeanor. Any person who commences or does any grading in violation of this Chapter is guilty of a misdemeanor. Every day that a violation of this Chapter is committed, continued or permitted to exist is a separate violation, punishable as provided in this Code.

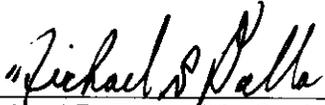
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PASSED and ADOPTED this 19th day of February, 2008.



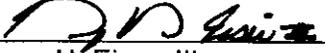
Ron Morrison, Mayor

ATTEST: •



Michael R. Dalla, City Clerk

APPROVED AS TO FORM:



George H. Eiser, III
City Attorney

Passed and adopted by **the Council** of the City of National City, California, on February 19, 2008, by the following vote, to-wit:

Ayes: Councilmembers Morrison, Natividad, Parra, Ungab.

Nays: None.

Absent: Councilmember Zarate.

Abstain: None.

AUTHENTICATED BY: RON MORRISON
Mayor of the City of National City, California

MICHAEL R. DALLA
City Clerk of the City of National City, California

By: _____
Deputy

I HEREBY CERTIFY that the foregoing ordinance was not finally adopted until seven calendar days had elapsed between the day of its introduction and the day of its final passage, to wit, on February 5, 2008, and on February 19, 2008.

I FURTHER CERTIFY THAT said ordinance was read in full prior to its final passage or that the reading of said ordinance in full was dispensed with by a vote of not less than a majority of the members elected to the Council and that there was available for the consideration of each member of the Council and the public prior to the day of its passage a written or printed copy of said ordinance.

I FURTHER CERTIFY that the above and foregoing is a full, true and correct **copy of** ORDINANCE NO. 2008-2306 of the City Council of the City of National City, passed and adopted by the Council of said City on February 19, 2008.



Michael R. Dalla
City Clerk of the City of National City, California

By: _____
Deputy

APPENDIX J

GRADING

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION J101 GENERAL

5101.1 Scope. The provisions of this chapter apply to grading, excavation and earthwork construction, including fills and embankments. Where conflicts occur between the technical requirements of this chapter and the soils report, the soils report shall govern.

5101.2 Flood hazard areas. The provisions of this chapter shall not apply to grading, excavation and earthwork construction, including fills and embankments, in floodways within flood hazard areas established in Section 1612.3 or in flood hazard areas where design flood elevations are specified but floodways have not been designated, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed work will not result in any increase in the level of the base flood.

SECTION J102 DEFINITIONS

J102.1 Definitions. For the purposes of this appendix chapter, the terms, phrases and words listed in this section and their derivatives shall have the indicated meanings.

BENCH. A relatively level step excavated into earth material on which fill is to be placed.

COMPACTION. The densification of a fill by mechanical means.

CUT. See Excavation.

DOWN DRAIN. A device for collecting water from a swale or ditch located on or above a slope, and safely delivering it to an approved drainage facility

EROSION. The wearing away of the ground surface as a result of the movement of wind, water or ice.

EXCAVATION. The removal of earth material by artificial means, also referred to as a cut.

FILL. Deposition of earth materials by artificial means.

GRADE. The vertical location of the ground surface.

GRADE, EXISTING. The grade prior to grading.

GRADE, FINISHED. The grade of the site at the conclusion of all grading efforts.

GRADING. An excavation or fill or combination thereof.

KEY. A compacted fill placed in a trench excavated in earth material beneath the top of a slope.

SLOPE. An inclined surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

TERRACE. A relatively level step constructed in the face of a graded slope for drainage and maintenance purposes.

SECTION J103

PERMITS REQUIRED

J103.1 Permits required. Except as exempted in Section J103.2, no grading shall be performed without first having obtained a permit therefor from the building official. A grading permit does not include the construction of retaining walls or other structures.

5103.2 Exemptions. A grading permit shall not be required for the following:

1. Grading in an isolated, self-contained area, provided there is no danger to the public, and that such grading will not adversely affect adjoining properties.
2. Excavation for construction of a structure permitted under this code.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations.
5. Excavations for wells, or trenches for utilities.
6. Mining, quarrying, excavating, processing or stockpiling rock, sand, gravel, aggregate or clay controlled by other regulations, provided such operations do not affect the lateral support of, or significantly increase stresses in, soil on adjoining properties.
7. Exploratory excavations performed under the direction of a registered design professional.

Exemption from the permit requirements of this appendix shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

SECTION J104

PERMIT APPLICATION AND SUBMITTALS

J104.1 Submittal requirements. In addition to the provisions of Section 105.3, Appendix Chapter 1, the applicant shall state the estimated quantities of excavation and fill.

J104.2 Site plan requirements. In addition to the provisions of Section 106, Appendix Chapter 1, a grading plan shall show the existing grade and finished grade in contour intervals of sufficient clarity to indicate the nature and extent of the work and show in detail that it complies with the requirements of this code. The plans shall show the existing grade on adjoining properties in sufficient detail to identify how grade changes will conform to the requirements of this code.

J104.3 Soils report. A soils report prepared by registered design professionals shall be provided which shall identify the nature and distribution of existing soils; conclusions and recommendations for grading procedures; soil design criteria for any structures or embankments required to accomplish the proposed grading; and, where necessary, slope stability studies, and recommendations and conclusions regarding site geology.

Exception: A soils report is not required where the building official determines that the nature of the work applied for is such that a report is not necessary.

3104.4 Liquefaction study. For sites with mapped maximum considered earthquake spectral response accelerations at short periods (S_s) greater than 0.5g as determined by Section 1613, a study of the liquefaction potential of the site shall be provided, and the recommendations incorporated in the plans.

Exception:

1. A liquefaction study is not required where the building official determines from established local data that the liquefaction potential is low.
2. [OSHPD 1, 2 & 41 Exception 1 not permitted by OSHPD.

**SECTION J105
INSPECTIONS**

5105.1 General. Inspections shall be governed by Section 109, Appendix Chapter 1, of this code.

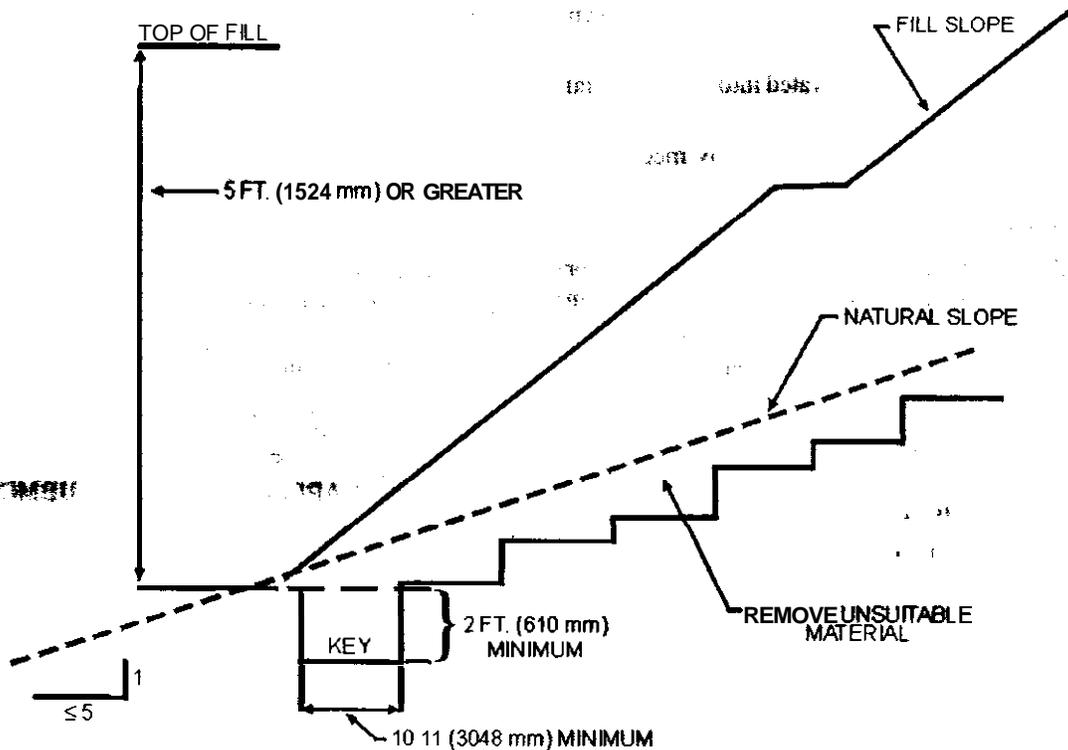
5105.2 Special inspections. The special inspection requirements of Section 1704.7 shall apply to work performed under a grading permit where required by the building official.

**SECTION J106
EXCAVATIONS**

5106.1 Maximum slope. The slope of cut surfaces shall be no steeper than is safe for the intended use, and shall be no steeper than 2 horizontal to 1 vertical (50 percent) unless the applicant furnishes a soils report justifying a steeper slope.

Exceptions:

1. A cut surface may be at a slope of 1.5 horizontal to 1 vertical (67 percent) provided that all the following are met:
 - 1.1. It is not intended to support structures or surcharges.
 - 1.2. It is adequately protected against erosion.
 - 1.3. It is no more than 8 feet (2438 mm) in height.
 - 1.4. It is approved by the building official.
2. A cut surface in bedrock shall be permitted to be at a slope of 1 horizontal to 1 vertical (100 percent).



For SI: 1 foot = 304.8 mm.

**FIGURE J107.3
BENCHING DETAILS**

**SECTION J107
FILLS**

5107.1 General. Unless otherwise recommended in the soils report, fills shall conform to provisions of this section.

J107.2 Surface preparation. The ground surface shall be prepared to receive fill by removing vegetation, topsoil and other unsuitable materials, and scarifying the ground to provide a bond with the fill material.

J107.3 Benching. Where existing grade is at a slope steeper than 5 horizontal to 1 vertical (20 percent) and the depth of the fill exceeds 5 feet (1524 mm) benching shall be provided in accordance with Figure J107.3. A key shall be provided which is at least 10 feet (3048 mm) in width and 2 feet (610 mm) in depth.

J107.4 Fill material. Fill material shall not include organic, frozen or other deleterious materials. No rock or similar irreducible material greater than 12 inches (305 mm) in any dimension shall be included in fills.

5107.5 Compaction. All fill material shall be compacted to 90 percent of maximum density as determined by ASTM D 1557, Modified Proctor, in lifts not exceeding 12 inches (305 mm) in depth.

[DSA-SS and OSHPD 1, 2 & 41 This section establishes minimum requirements only.]

J107.6 Maximum slope. The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes steeper than 2 horizontal to 1 vertical (50 percent) shall be justified by soils reports or engineering data.

**SECTION J108
SETBACKS**

J108.1 General. Cut and fill slopes shall be set back from the property lines in accordance with this section. Setback dimensions shall be measured perpendicular to the property line and shall be as shown in Figure J108.1, unless substantiating data is submitted justifying reduced setbacks.

J108.2 Top of slope. The setback at the top of acut slope shall not be less than that shown in Figure J108.1, or than is required to accommodate any required interceptor drains, whichever is greater.

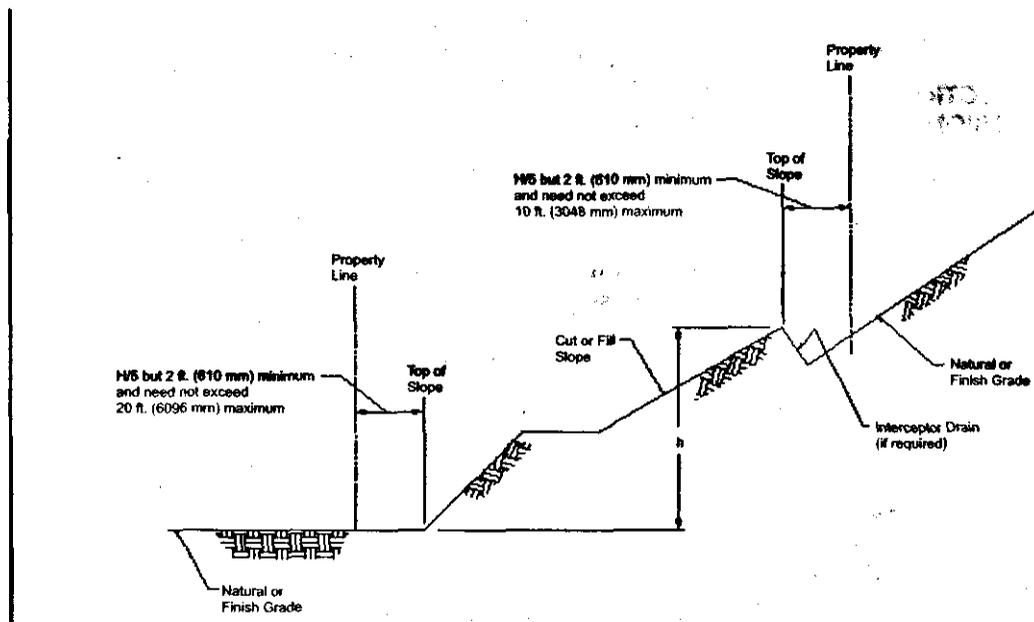
J108.3 Slope protection. Where required to protect adjacent properties at the toe of a slope from adverse effects of the grading, additional protection, approved by the building official, shall be included. Such protection may include but shall not be limited to:

1. Setbacks greater than those required by Figure J108.1.
2. Provisions for retaining walls or similar construction.
3. Erosion protection of the fill slopes.
4. Provision for the control of surface waters.

**SECTION J109
DRAINAGE AND TERRACING**

J109.1 General. Unless otherwise recommended by a registered design professional, drainage facilities and terracing shall be provided in accordance with the requirements of this section.

Exception: Drainage facilities and terracing need not be provided where the ground slope is not steeper than 3 horizontal to 1 vertical (33 percent).



For SI: 1 foot = 304.8 mm.

**FIGURE J108.1
DRAINAGE DIMENSIONS**

5109.2 Terraces. Terraces at least 6 feet (1829 mm) in width shall be established at not more than 30-foot (9144 mm) vertical intervals on all cut or fill slopes to control surface drainage and debris. Suitable access shall be provided to allow for cleaning and maintenance.

Where more than two terraces are required, one terrace, located at approximately mid-height, shall be at least 12 feet (3658 mm) in width.

Swales or ditches shall be provided on terraces. They shall have a minimum gradient of 20 horizontal to 1 vertical (5 percent) and shall be paved with concrete not less than 3 inches (76 mm) in thickness, or with other materials suitable to the application. They shall have a minimum depth of 12 inches (305 mm) and a minimum width of 5 feet (1524 mm).

A single run of **swale** or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet (1256 m²) (projected) without discharging into a down drain.

5109.3 Interceptor drains. Interceptor drains shall be installed along the top of cut slopes receiving drainage from a tributary width greater than 40 feet (12 192 mm), measured horizontally. They shall have a minimum depth of 1 foot (305 mm) and a minimum width of 3 feet (915 mm). The slope shall be approved by the building official, but shall not be less than 50 horizontal to 1 vertical (2 percent). The drain shall be paved with concrete not less than 3 inches (76 mm) in thickness, or by other materials suitable to the application. **Discharge** from the drain shall be accomplished in a manner to **prevent** erosion and shall be approved by the building official.

5109.4 Drainage across property lines. Drainage across property lines shall not exceed that which existed prior to grading. Excess or concentrated drainage shall be contained on site or directed to an approved drainage facility. Erosion of the **ground** in the area of discharge shall be prevented by installation of nonerosive down drains or other devices.

SECTION J110 EROSION CONTROL

J110.1 General. The faces of cut and fill slopes shall be prepared and maintained to control erosion. This control shall be **permitted** to consist of effective planting.

Exception: Erosion control measures **need** not be provided on cut slopes not subject to erosion due to the erosion-resistant character of the materials

Erosion control for the slopes shall be installed as soon as practicable and prior to calling for final inspection.

J110.2 Other devices. Where necessary, check dams, cribbing, **riprap** or other devices or methods shall be employed to control erosion and provide safety.

SECTION J111 REFERENCED STANDARDS

ASTM D 1557-e01	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lb/ft ³ (2,700kN-m/m ³)].	J107.6
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